

Uses of digital technologies by Nepali migrants and their families



AUTHORS

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ABSTRACT

This working paper forms part of the output of Work Package 9 on technology, inequality and migration within the MIDEQ Hub, a multi-disciplinary research project in 12 countries of Latin America, Africa and Asia, including the Nepal-Malaysia migration corridor. It presents the results of an online survey of 266 respondents in and from Nepal, 58.5% of whom identified themselves as migrants, with 28.1% being family members of migrants, and 13.4% being returned migrants. Following a summary of the methodology, which explains why an online survey was used to replace the originally planned interviews and focus groups, the paper provides an overview of the most important results and analysis, focusing on the potential influence of age, gender, countries of origin and destination, migration status, and occupational status on the ways in which respondents use digital technologies and for what purposes. Three important conclusions for Phase Two of our research are: first, the vast majority of Nepali respondents have smart phones and access the internet very frequently for a wide range of purposes; second, simply designing another new app may not be particularly valuable; and third, it might well be wise to work with, or build on, technologies and apps already in existence, so as to improve them in ways that could increasingly empower migrants

KEY FINDINGS

1. Nepali migrants and their families make extensive use of digital technologies – especially smart phones and the Internet for a wide range of purposes, and not just for audio and video calls

2. Very few migrants make any use at all of apps that have been developed specifically for migrants – and even those 8.7% that claim to do so may not have actually used such apps

3. Migrant use of digital technologies increases through the migration journey – only 46.4% had used digital tech daily before migrating, whereas 85.4% used them daily while in the migration destinations.



Introduction

This is the second in a series of working papers presenting the initial findings from research conducted by Work Package 9 of the UKRI GCRF funded MIDEQ Hub¹ into how migrants use digital technologies. This work package is one of three “intervention” packages within MIDEQ,² and has the overarching objective of facilitating the crafting of a digital intervention (or interventions) that will contribute to reducing inequalities associated with migration between and among a selection of the 12 countries chosen for study by the MIDEQ leadership in Africa, Asia and Latin America. This second working paper summarises the results from collaborative research with migrants from Nepal.

A three-phase approach

Our work package has adopted a very specific three-phase approach to deliver its overall objective. It is designed explicitly to learn from and work with migrants and local tech developers to craft an intervention of their choosing. The *first phase* of the research (2019-20) aims to understand better how migrants currently use digital technologies. Originally, this was intended primarily to be undertaken through interviews, focus groups and other qualitative methods in four of the MIDEQ migration corridors (China-Ghana, Ethiopia-South Africa, Haiti-Brazil, and Nepal-Malaysia). Building on this, the *second phase* (2021-22) aims to explore further how migrants understand the notion of inequalities associated with migration, what they might like to change, and how digital technologies might be able to effect such change. This phase seeks to combine migrants’ understandings of migration inequalities with the digital experiences of colleagues within the work package. The *third phase* is to facilitate interactions between local tech developers and migrants, with the intention of crafting one or more digital interventions that might help reduce the identified inequalities.

The impact of COVID-19 on Phase One

The qualitative empirical field research for the first phase was intended to take place mainly in 2020 and early 2021, and was to be undertaken in country collaboratively with the lead teams therein. However, this proved to be impossible as a result of the global COVID-19 pandemic, which not only had serious implications for migrants across the world, but also prevented travel between countries for any research visits. Furthermore, the UK government dramatically cut funding to the UKRI GCRF in an effort to use these savings to support its own response to COVID-19. This led to the formal suspension of Work Package 9 within MIDEQ. However, Royal Holloway, University of London generously stepped in to provide one year’s funding to cover the costs of employing a post-doctoral researcher following the cessation of MIDEQ funding to the work package.

The leadership of Work Package 9 responded by adopting a creative and flexible approach to these challenges, and developed an online survey instead of conducting the previously planned qualitative work (see methodology below). This produced a very different kind of data to that originally anticipated, but it did also have a range of unanticipated advantages.

¹ MIDEQ is funded by the [UK Research and Innovation \(UKRI\) Global Challenges Research Fund \(GCRF\)](#) and is a five year project (2019-2024) with an ambitious aim to transform understanding of the relationship between migration and inequality in the context of the “Global South” by decentring the production of knowledge about migration and its consequences away from the “Global North” towards those countries where most migration takes place. [Work Package 9](#) is led by staff within the UNESCO Chair in ICT4D at Royal Holloway, University of London. These Working Papers present the findings of online surveys conducted in 2020 and 2021, and material on the context and methodology is broadly similar in all of the papers, although the results and analysis vary.

² The other work packages focus explicitly of sectoral themes such as gender, childhood, intermediaries, and access to justice. The other two intervention packages are on political mobilisation and access to justice.

The Nepal-Malaysia migrant corridor

One of the six corridors in which the MIDEQ Hub is conducting research is that from Nepal to Malaysia. There were approximately 500,000 Nepalese, mainly men, reported to be living in Malaysia in 2019 (Yeoh and Ghimire, 2019).³ This has significant implications for their wives and families remaining in Nepal, and our work there has focused particularly on the ways through which they use digital technologies (Figure 1). Nepalese migrants represent about 16% of the total migrant population in Malaysia, and are mainly employed in manufacturing, construction, agriculture and services.⁴ Intermediaries play a key role in the migration process (Kunwar, 2020), and Nepali migrant workers are faced with various restrictions in their destination country. Malaysia remains a very popular destination for Nepali workers, who sent home US\$8.1 billion in 2018, making Nepal the 19th largest beneficiary of funds sent home by migrants anywhere in the world. The Nepal government temporarily banned migrant workers from travelling to Malaysia in 2018 because of concerns over their welfare, and in September 2019 both countries signed an agreement to make migration safer, easier and less costly for workers.⁵ Some 14% of Nepal's total population of 3.5 million people are currently working abroad, with other popular destinations being the Gulf Co-operation Countries and India (Ghimire, 2019; for wider discussion on migration in this corridor and neighbouring countries see ILO, 2018, 2019a, 2019b; see also Ghimire, 2021; Ghimire and Upreti, 2012; and Ghimire and Maharjan, 2013).



Figure 1: Migrants' wives in Nepal discussing the impact of migration (Source: Anita Ghimire)

³ <https://www.mideq.org/en/resources-index-page/nepal-malaysia-corridor-brief/>.

⁴ <https://www.mideq.org/en/resources-index-page/malaysia-brief/>.

⁵ See Dixit, K. (2019) Nepal and Malaysia rewrite rules for migrant labour, *Nepali Times*, <https://www.nepalitimes.com/here-now/nepal-and-malaysia-rewrite-rules-for-migrant-labour/>.

Methodology

The only means to gain some basic data for Phase One of our research in the face of COVID-19 was to use online methods and to ask our MIDEQ partners and others within our networks to help disseminate the links for the surveys to migrants. We therefore decided to create a short online survey to explore aspects of how migrants used digital technologies across all the corridors in which we are working. The advantages and disadvantages of such an approach to the use of digital technologies are summarised briefly in Table 1 below.⁶

Table 1: Advantages and disadvantages of an online survey approach

Advantages of an online approach	Disadvantages of an online approach
<ul style="list-style-type: none"> • Feasible in a context where travel and on the ground field research are impossible • Focus on the use of digital tech by migrants, and so migrants who were using digital tech could still respond • Enabled many more people to respond than would have been possible through originally planned qualitative methods • Anyone with access to the digital link could complete the survey, and so could include respondents not just from the MIDEQ corridor countries • Limits the impact of variable researcher influence on respondents' answers to the questions 	<ul style="list-style-type: none"> • Some people may have reservations about completing online surveys for security reasons or uncertainty about the use of such technologies • Does not enable the richness of in-depth discourse available through qualitative research • Focuses mainly on closed questions, which can constrain respondents' answers • Little control over exactly who answered the questions – reliant on partners' decisions about sampling • Costs of air-time acting as a disincentive for some to complete the survey.

Design approach

We were driven by seven overarching principles in developing the online survey to be used in all the MIDEQ corridors where we are undertaking research:

- It should be as short as possible, so that migrants would not need to spend much time in its completion;
- It should be in relevant languages, so that it can be readily understood by migrants;
- The questions should be framed together with our partners;
- It should be easy to use and as accessible as possible for mobile devices;
- It should focus very clearly only on the basic theme of how migrants and their families are currently using digital technologies;
- Each survey should have its own identity, using the logos of the partners involved in disseminating the links associated with a colour scheme relevant to the context; and
- It should be uniform in structure and content across all the countries in which we were researching.

The survey design for Nepal is shown in Figure 2, and as with most of the surveys, the colours chosen were based mainly around those used in the national flag.

⁶ The focus of our research was explicitly on exploring the views of those who use of digital technologies, and the use of an online survey was therefore particularly appropriate, since it provided an indication of respondents' familiarity with the technology. However, the survey also included questions for those who did not use such technology, with the option to have someone help them complete it.

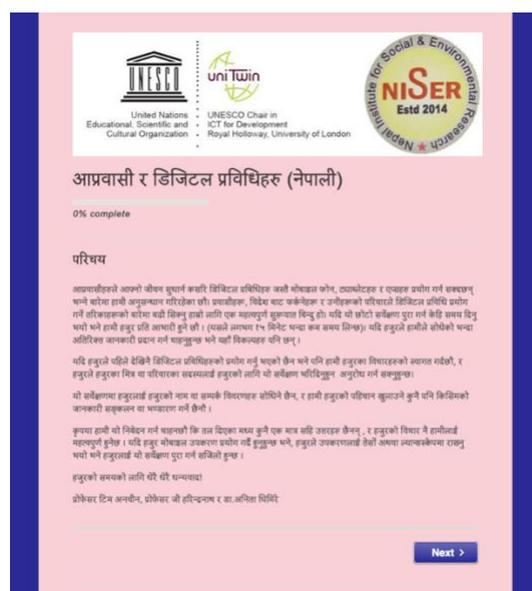


Figure 2: Survey designs for use in Nepal

Partner involvement and survey design in Nepal

The lead MIDEQ partner involved in the survey in Nepal was the Nepal Institute for Social and Environmental Research (NISER).⁷ Colleagues there assisted with the overall design of the generic questions used in all our online surveys, undertook the translation of the survey into Nepali, and distributed it to a diverse range of migrants and their families. Surveys in both English and Nepali were made available. The role of families and the pre-departure activities of migrants before migration are of particular interest to the MIDEQ research team in Nepal, and so they helped ensure a diversity of migrant responses and that their families were also included in the survey.

Structure and questions

The survey has five basic sections, following an introduction that briefly summarises its purpose, and emphasises that all the responses are strictly anonymous.

- The first section asks whether or not the respondent uses digital technologies, and depending on the response (yes/no) directs them through two different routes.
- For those who answer no, there then follows a section about why they do not use digital technologies.
- For those who answer yes, the subsequent questions are grouped into two sections: the first asks questions about how and why they use different types of digital technologies, and the second asks about the apps (applications) that they use.
- Both groups of respondents are then asked to provide some limited information about themselves for the purpose of analysing their previous responses. This section comes last because we do not wish to put migrants off in any way by appearing to ask personal questions before answering the substantive questions in which we are really interested.

Most of the 19 questions asked were in the form of two-dimensional matrices in which respondents simply had to check a box indicating, for example, the frequency with which they used a particular type of technology (annually, monthly, weekly or never). However, where relevant the questions also provide respondents with the opportunity to tick a box for “other”

⁷ Monash University in Malaysia is the lead MIDEQ partner for work in Malaysia.

and provide further qualitative responses. The personal information that they are invited to contribute consists of:

- Whether they were a migrant living overseas, a returned migrant living in the home country, or a family member of a migrant.
- The country in which they were born (drop-down menu).
- The country in which they are now living (drop-down menu).
- Length of time living in the country where they now are (drop-down menu).
- The country where they consider their home to be.
- Their age.
- Their gender.
- Their current employment status (part- or full-time, in formal or informal sector, or not working).

These categories provided the basis for the subsequent analysis of the responses.

The choice of options as possible responses to specific questions in part drew on existing literatures on technology use by migrants, and also on the suggestions made by our partners in the early stages of the research design across all of the countries where we were working. Nevertheless, we sought to limit the total number of options in any one question to around ten, although the question on what uses were made of specific devices (mobiles, tablets, laptops and desktops) stretched to 14 optional responses. It was particularly difficult to agree on a set of generic apps that migrants might use that would be relevant across all countries. Ultimately 11 options were agreed, based on data (all for 2019) about the worldwide usage of different apps. Interestingly, different sources, using varying measures are not consistent in their rankings, and so difficult judgements had to be made about what to include.⁸ We were also keen to use apps developed in both China and the USA (in Chinese and in English), given the strong influence of Chinese technologies in some of the countries of interest.

Choice of platform

The platform used for the survey was the UK academic JISC Online Surveys (formerly Bristol Online Surveys),⁹ primarily because of our existing familiarity with its design and functionality, but also because it is GDPR compliant, secure, certified to ISO 27001 standard, relatively easy to use, built specifically for research and education, and has sophisticated analytical tools embedded within it, while also enabling easy export of the results for further statistical analysis.

Survey distribution and sampling

We have relied heavily on our research partner country teams within MIDEQ for support in distributing the survey to as many people as possible. This was necessitated both by conditions during the pandemic, and also by the funding model within MIDEQ whereby most research funding was distributed to and managed by these country teams. In practice, this also meant that each country team distributed the survey links in rather different ways, depending on their networks, and what they thought would be most effective in their particular contexts. As with all the surveys, the intention was to have a minimum of 250 responses, not least so that some statistical analysis could be undertaken using the data. With eight countries in total, this will give a global sample of around 2000 people. Although this is a broader sample than a small number of in-depth interviews, it must be recognised that it still remains only a partial glimpse

⁸ Sources used were: <https://www.messengerpeople.com/global-messenger-usage-statistics/>, <https://www.similarweb.com/corp/blog/worldwide-messaging-apps/>, <https://techjury.net/stats-about/app-usage/#gref>, <https://sensortower.com/blog/top-apps-worldwide-q1-2019-downloads>, <https://www.netsolutions.com/insights/top-10-most-popular-apps-2018/>, <https://blog.sagipl.com/most-used-apps/>, <https://www.appinchina.co/market/apps/>, <https://lil-school.com/chinese-apps/>, <https://www.scmp.com/magazines/style/news-trends/article/2172512/life-china-made-easier-these-top-8-must-download-apps> and <https://www.24hchina.com/chinese-app-store-list/>.

⁹ <https://www.onlinesurveys.ac.uk/>.

of the situation, and that each country will be seen through rather different lenses as a result of the differing approaches to sampling adopted by the country teams. Our research combines both quantitative and qualitative methods, which have very different objectives, but sampling remains an issue of concern in both approaches.

The Nepal team worked in challenging conditions during the pandemic in order to meet with migrants and their families in the four research locations that had previously been selected for the MIDEQ-funded research. These districts also served as entry points to reaching the migrants currently in destination countries. Online surveys present particular challenges with respect to participation, especially in isolated areas where people may not be familiar with the technologies (Table 1). A separate team consisting of one male and one female researcher was therefore deployed to reach out to people through face-to-face meetings (for left behind family members) and to ask them to participate in the surveys in Jhapa and Kathmandu valleys. These researchers also involved three local facilitators in the other two locations of Bardiya and Saptari where they could not go due to lockdown and resource constraints. Family members also provided contact phone numbers for their relatives currently overseas and calls were made to them to encourage them to participate in the survey. Snowball methods were then used to reach other respondents in both destination and origin locations. All information needed by respondents about the research and the wider MIDEQ project as shared with them prior to completion of the online survey.

To supplement the work on the ground in Nepal, we also shared information about the survey links through members of the UNESCO Chair in ICT4D's networks, especially on social media, with the intention of gathering information from Nepali migrants in parts of the world beyond just Nepal and Malaysia. In order to maintain complete anonymity, though, we have no means of identifying how individual respondents learnt about the survey.

Results

This summary of results for the surveys conducted in Nepal is divided into sections on the sample, on how respondents used digital devices, and on the applications that they used.

The sample

Sample size

A total of 266 respondents completed the Nepali survey between May 2020 and July 2021, with all of them being completed in the Nepali language version and none in the English version.¹⁰

Age and gender

The biggest age group represented in the sample were the 42.7% aged between 21 and 30, with 35.3% being aged between 31 and 40; women represented 33.9% of the sample (Table 2). Just over half of the women were aged 21-30, but men in this age group only accounting for 38.8% of all men in the sample, with those aged 31-40 adding a further 37.1%.

¹⁰ Not all respondents answered every question and so N does not always total 266.

Table 2: Age and gender distribution of respondents

How old are you (n=255; 11 no answer)	What gender do you consider yourself to be?			Totals
	Female	Male	Other	
< 10 years old	0	0	0	0
10-20 years old	1	5	0	6
21-30 years old	43	66	0	109
31-40 years old	27	63	0	90
41-50 years old	7	25	0	32
51-60 years old	6	10	0	16
>60 years old	1	1	0	2
Totals	85	170	0	255

Country of origin, residence and home

In line with the MIDEQ research emphasis on the specific migration corridor between Nepal and Malaysia, the selection of respondents who were invited to participate in the survey, and the use of the Nepali language, it is unsurprising that the vast majority of those who completed the survey were indeed from Nepal: 95.8% of respondents were born in Nepal, with single individuals also being born in 11 other countries.

More than a third (35.2%) of the respondents were currently living in Nepal with 34 other countries of residence being mentioned, topped by Australia (10.3%), the United Arab Emirates (7.1%), the USA (6.3%), Qatar (5.9%), New Zealand (4.7%), USA Samoa (3.6%), the United Kingdom (3.6%), and Canada (3.2%). Just over 86% consider their home to be in Nepal. Only four of the respondents reported that they were currently living in Malaysia (the same number as in Cyprus or Portugal) and none considered it to be their home. Of the 89 respondents now living in Nepal, 51 (57.3%) were family members, and 26 (29.2%) were returned migrants.

The balances between the percentages of women and men in each country were generally similar, as with 36.8% of the female sample living in Nepal, and 32.9% of the male sample so doing. However, there was a considerable discrepancy in Australia, where 18.4% of the women were living and only 5.9% of the men, as well as the reverse in Qatar, where there were no women and 8.8% of the men.

Migration status

There was a reasonable range of types of respondents, with 58.5% being migrants living overseas, 28.1% being family members, and 13.4% being returned migrants now living once again in Nepal. Table 3 provides an overview of the gender balance between these different categories.

Table 3: Gender distribution of migrant, returned migrant and family member respondents

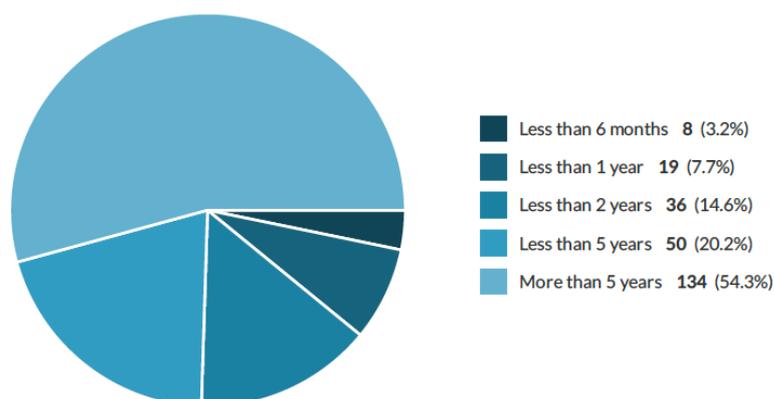
(Column percentages of respondents)	What gender do you consider yourself to be?	
	Female	Male
A migrant (living overseas)	56.32%	57.65%
A returned migrant (now living in home country)	5.75%	15.29%
A family member of a migrant	36.78%	21.76%

These differences are significant at the $P=0.05$ level, mainly because there were fewer female returned migrants, and more who are family members of migrants, than would be expected if there were no significant differences between the various categories.¹¹

Duration of migration overseas

Most (54.3%) of the respondents had been living where they now are for more than five years. However, there was some range of duration, with 20.2% of the sample having been there for between two and five years, and 14.6% for between one and two (Figure 3).

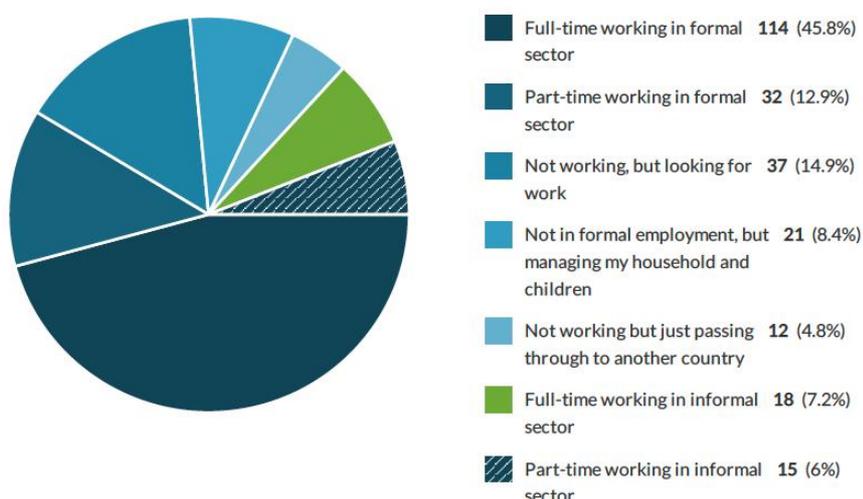
Figure 3: Length of time spent in the country where respondents are now living



Occupation

More than half (58.7%) of respondents were working in the formal sector, 45.8% full time, and 12.9% part-time. A further 14.9% were not working but looking for work, and 8.4% were managing their household and children (Figure 4).

Figure 4: Current main employment status of respondents



The migration status of respondents (migrants, returnees, family members) unsurprisingly had a statistically significant relationship with their employment status.¹² This was driven mainly

¹¹ $\chi^2 = 8.98$ with 2 df which is more than the critical value of the Chi-squared distribution at the level of $p = 0.05$ (5.99), and so we can reject the null hypothesis (of no difference between the distributions) at this level.

¹² $\chi^2 = 45.94$ with 12 df which is more than the critical value of the Chi-squared distribution at the level of $p = 0.05$ (21.03), and so we can reject the null hypothesis (of no difference between the distributions) at this level.

by three observations: that higher numbers of returned migrants were looking for work than would be expected if there were no significant differences; that migrants were generally more likely to be in full time formal work in the formal sector, whereas fewer returned migrants were in this category; and that higher numbers of family members were managing their households and children.

Support in completing the survey

The extent to which migrants needed, or sought, support in completing the survey is an important indication both of their digital expertise and also of the potential influence of another person on the responses provided. Only 5.3% (14 people) of the respondents agreed that they did not use digital technologies, and for nine of these they were helped to complete the survey by a family member.

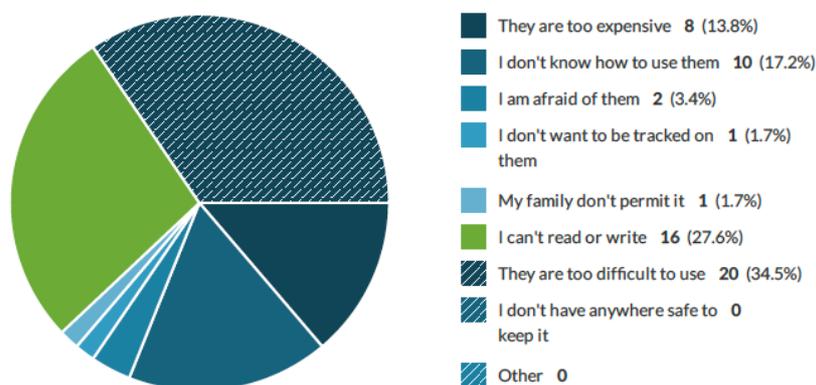
Usage of digital technologies by respondents

The above summary indicates that the sample was quite diverse, with both women and men, of different ages, and with different migration experiences and destinations. The implications of the impact of these variables on uses of digital technologies is explored further in the analytical section of this working paper, but before then this section provides an overview of the main findings concerning how the respondents in general used digital tech.

Usage and non-usage of digital technologies

As noted above, almost all the respondents (94.7%) did indeed use digital technologies. However, the survey specifically asked those who did not use them to respond to eight possible reasons why.¹³ Figure 5 summarises these results, and shows that the dominant reasons were because they are seen as being difficult to use (34.5%) or the respondent could not read or write (27.6%). None identified other reasons for not using digital tech, which provided useful reassurance that our list of options for use in the survey did indeed reflect their realities.

Figure 5: Reasons for not using digital technologies



Frequency of use of digital technologies

As noted above, the vast majority of respondents do indeed use digital technologies. More than 99% of those who used digital technologies used both smart phones and the Internet daily, but unlike in some of our surveys from other countries there is much greater variability in the frequency of use of other digital technologies (Table 4; shading in green indicates agreement by $\geq 90\%$ of sample). Quite high percentages claimed never to use digital radio (55%), tablets (32.1%) or desktop computers (28.5%).

¹³ Respondents were invited to check as many boxes from the list as they wished.

Table 4: Frequency of use by respondents of different types of digital technology and the Internet¹⁴

(Column percentages of respondents)	Desktop computer	Digital radio	Digital TV	Basic mobile/feature phone	Mobile smart phone	Laptop	Tablet	Internet
Daily	49%	24%	67.3%	74.7%	99.6%	69.2%	32.9%	99.5%
Weekly	11.9%	9.3%	15.1%	3%	0	16.2%	17.1%	0.5%
Monthly	10.6%	11.6%	5%	4.2%	0.4%	6.5%	17.9%	0
Never	28.5%	55%	12.6%	18.1%	0	8.1%	32.1%	0

Reasons for using digital devices

Our survey explored the usage of digital technologies in more detail by concentrating on the purposes for which respondents said they used four of these types of device (mobile phones, tablets, laptops and desktop computers).¹⁵ Table 5 summarises these results (with green shading again indicating $\geq 90\%$ agreement); the percentages indicate the frequencies with which people who answered each question chose that option. Some people used several different types of device for the same purpose, and the percentages indicate the share of the sample who said they used a given device for a specific purpose. Thus everyone used a mobile phone for audio calls, but 4.1% also used a tablet to make audio calls, and 7.5% used a laptop.

Table 5: Usage of different types of digital device for a selection of purposes

(Column percentages of respondents, n=266)	Mobile phones	Tablets	Laptops	Desktop computers
Audio calls	100%	4.1%	7.5%	1.2%
Text messages	89.9%	7.3%	32.6%	9.2%
Video calls	96.5%	8.7%	20.4%	2.2%
Playing games	82.0%	11.6%	15.9%	7.4%
Watching videos for entertainment	87.2%	15.0%	34.5%	4.0%
Work	55.2%	7.5%	54.7%	26.4%
Learning and education	64.4%	9.8%	58.5%	17.1%
Accessing government services	65.5%	7.5%	54.6%	20.7%
Social networking	96.4%	8.6%	25.4%	4.1%
Cultural activities	84.5%	11.5%	32.8%	8.0%
Political activities	87.2%	9.3%	25.6%	7.6%
Health activities	92.7%	9.9%	27.2%	4.2%
News updates	92.8%	10.8%	30.9%	6.7%
Other	82.8%	20.4%	44.1%	11.8%

This indicates that mobile phones are preferred for all types of use, with laptops also being popular, especially for learning/education, work and accessing government services. Mobile phones are especially used (in descending order of frequency) for audio calls, video calls, and

¹⁴ Percentages indicate the percentage of respondents who selected each answer (100% would indicate that all a question's respondents chose that option)

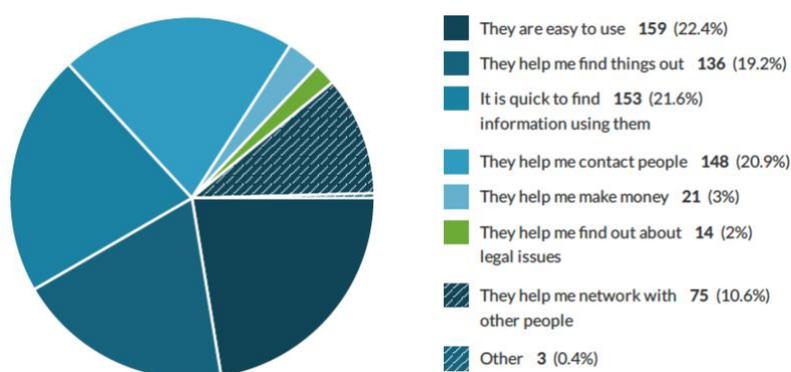
¹⁵ The specific question asked was "Focusing on just four of these devices (mobile phones, tablets, laptops, desktop computers), please indicate which types of technology you use for what purpose (click all of the relevant boxes). If you do not use a specific technology, please just leave the relevant boxes blank."

social networking. Interestingly, tablets are infrequently used for anything, and desktops are used mainly for work and accessing government services.

Likes and dislikes of using digital technologies

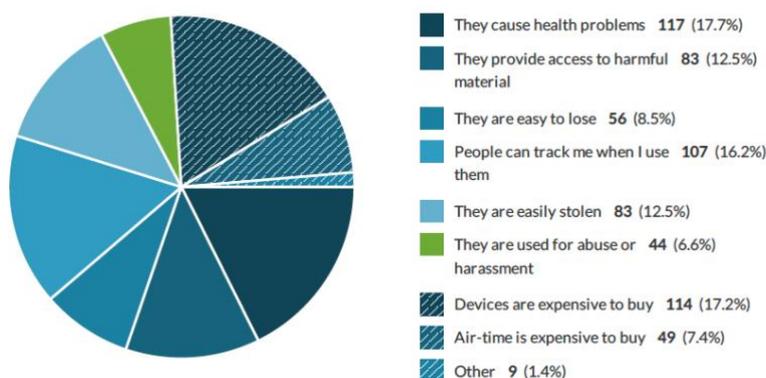
The survey also explored what the migrant respondents liked and disliked about using devices and apps, by asking them which of a list of options were their top three reasons for liking and top three for disliking them.¹⁶ The four main reasons why digital devices are liked are because they are easy to use (22.4%), it's quick to find information using them (21.6%), they help in contacting people (20.9%), and they help users find things out (19.2%) (Figure 6). Interestingly, these were all cited similarly by around 20% of the sample.

Figure 6: Reasons for liking digital technologies



In contrast, the main reasons why respondents disliked them were because they cause health problems (17.7%), they are expensive to buy (17.2%), and they can be used for tracking users (16.2%) (Figure 7). Interestingly, only 7.4% of the sample commented that air-time is expensive, suggesting that this is not as big an issue for Nepali migrants and their families as in some of the other countries where we are working.¹⁷

Figure 7: Reasons for disliking digital technologies



¹⁶ Two separate questions were asked, one for likes (What do you like about using digital technologies (devices and apps). Please click button on the most important factors (up to THREE) that apply, or add suggestions by clicking on "Other"), and one for dislikes (What don't you like about using digital technologies (devices and apps)? Please click button on the most important factors (up to THREE) that apply, or add suggestions by clicking on "Other")

¹⁷ This may in part be because of the relative costs of broadband connectivity relating to average income in the countries in which Nepali migrants who responded to the survey were currently living. Nepal itself has the 8th cheapest Internet connectivity in Asia, and 18th cheapest in the world (in absolute terms) according to <https://www.atlasandboots.com/remote-work/countries-with-the-cheapest-internet-world/>. In comparison, Malaysia has the 59th cheapest in the world, and South Africa the 132nd cheapest (out of 211 countries).

The very small number of “other” responses to each of these questions suggests that the survey has indeed captured the most important reasons why migrants like and dislike these technologies. Nevertheless, the added comments do shed some light on other factors that at least some respondents considered to be important. Three people thus noted that digital technologies waste time, with one adding that they were addictive. Another person commented that they gave rise to problems in family relationships, and one added that they cause mental disturbances.

Additional potential uses of digital technologies

Our overall research is particularly interested in identifying the digitally unmet needs of migrants and their families, and so respondents were asked what they would like to use digital technologies for that they cannot already do with them. Forty-six provided responses, although a quarter of these said “no idea” or “nothing” in response. Four people did, though, comment explicitly that they wanted to use them to make money, and a further seven expressed some kind of interest in developing high-level digital skills that could be used to generate business opportunities. One generously suggested that they wanted to use digital tech to spread information about Nepal to the world, and another just commented “*Life lai easy garnu*” (to make life easier).

Use of digital technologies during the migration journey

Those respondents who considered themselves to be migrants (n=148¹⁸) were asked a further set of questions about how often they used digital technologies at different stages within the migration process (Table 6)¹⁹.

Table 6: Frequency of digital technology use at different stages in the migration

(Column percentages of respondents)	Very often	Sometimes	Rarely	Never
Deciding to migrate	46.4%	29.0%	10.1%	14.5%
Before departure	71.5%	19.0%	3.6%	5.8%
During the migration journey	74.3%	17.8%	3.3%	4.6%
Upon arrival in destination country	82.5%	11.7%	3.2%	1.6%
While in new location	85.4%	12.5%	1.4%	0.7%
Deciding to return home	64.5%	24.1%	4.3%	7.1%
When/if you have returned home	64.5%	21.0%	4.8%	9.7%

¹⁸ 148 respondents stated that they were migrants in the question concerning whether they were migrants, returned migrants, or family members, but varying numbers of respondents (ranging from 124 to 154) answered the questions about using digital technologies during different parts of the migration journey. This reflects some fluidity in defining such categories. A family member of a migrant, for example, could also have migrated at some point in time.

¹⁹ We recognise that different people will interpret the options “very often”, “sometimes” and “rarely” in varying ways, but this choice of words was deliberate because our interest was in how migrants perceived these things themselves, and not just a purely quantitative measure of frequency.

This shows very clearly that frequency of use of digital technologies increases at every stage from considering to migrate through to while in the new location. Thus 85.4% of respondents use them very frequently while in their destination country in contrast to only 46.4% while deciding to migrate; conversely 14.5% never used them while deciding to migrate in contrast to only 0.7% who never use them while in their new location. It is somewhat surprising how little use migrants made of these technologies before actually departing their home country for the first time. In part, this may be due to the widespread use of local agents, and general trust in their knowledge rather than what can be found out by using digital tech, but also because they could not afford smart phones before migrating. However, it does suggest that their lack of initial experience in using digital technologies means that some of them could be particularly vulnerable to various forms of digital abuse during the migration journey and subsequently. It is also interesting to note that use of digital tech on return home from the countries to which they migrated is also lower than when they were overseas: only 64.5 used them very often on returning home, compared with 85.4% when they were in their migration location overseas.

Respondents' usage of apps

The most prominent feature of Table 7 is that the numbers of respondents commenting on each app varied dramatically from 104 to 254, and it is not easy to suggest why this might be, since the question was open to all 266 of the people who otherwise completed the survey.

Nevertheless, it is apparent from the responses received that migrants generally used the US-owned apps Facebook, Messenger and YouTube, in preference to Chinese apps such as Alipay or Baidu. It is also interesting to note that some migrants only used these apps infrequently (monthly or annually). This Table does though only indicate the globally dominant apps, and it is important to note that 42 respondents also wrote that they used other apps, and especially Imo (इमो)²⁰ which was mentioned by 14 respondents (5.3% of the overall sample). Other apps mentioned several times included Viber (6 people), with many other apps (including TikTok and LinkedIn) being mentioned just a couple of times.

Table 7: Frequency of usage of different apps

(Column percentages of respondents)	Number of responses	Never	Annually	Monthly	Weekly	Daily
Alipay	105	91.4%	1.9%	2.9%	1.9%	1.9%
Baidu	104	94.2%	1.9%	0	1.0%	2.9%
Facebook	240	10.4%	2.5%	2.1%	2.1%	82.9%
Instagram	166	17.5%	4.2%	4.8%	13.3%	60.2%
Messenger	228	8.3%	2.2%	2.2%	4.8%	82.5%
Netflix	146	32.9%	5.5%	8.2%	18.5%	34.9%
QQ	107	87.9%	2.8%	0.9%	1.9%	6.5%
Twitter	131	41.2%	5.3%	13.0%	9.9%	30.5%
WeChat	118	78.0%	2.5%	7.6%	6.8%	5.1%
WhatsApp	176	21.0%	2.3%	9.7%	18.2%	48.9%
YouTube	254	7.9%	3.1%	2.2%	6.2%	80.6%
Other	42					

Finally, respondents were also asked whether they had ever used an app specifically designed for migrants. The response was striking and clear: only 8.7% of them replied "yes", with 14.3% also commenting that they were unsure. However, none of the apps described by them as being migrant apps (BOTIM, Google maps and translate, Imo, Keku, MS Teams, Rebtel, ToTok, Viber,

²⁰ An app mainly for free video calls and messaging, but also for chats and stories (<https://imo.im/>). It is internationally operated by PageBites Inc. which is a wholly owned subsidiary of Singularity IM, Inc., both of which are based in Palo Alto, California, USA.

and “Video call”) were originally intended to be for migrants. Significantly, none of the respondents mentioned having used the Shuvayatra Safe Journey app launched for migrants by The Asia Foundation, the Non-Resident Nepali Association (NRNA) and Young Innovations in 2016.²¹

Analysis

This working paper is primarily intended to present the early results of our survey of migrants and their families in and from Nepal. Future working papers will present the findings for all of the countries within the MIDEQ Hub in which we are working, and we will then present the main analyses on a corridor-by-corridor basis. These data for Nepal will thus be analysed together with those from Malaysia to gain a more comprehensive understanding of the use of digital technologies along the Nepal-Malaysia corridor. It is interesting to note, though, that only four of those who responded from Nepal had ever migrated to Malaysia, although almost all of those responding in Malaysia were born in Nepal (Unwin *et al.*, 2021). Our initial analysis here is based exclusively on the material for Nepal, and focuses on the possible influences of age, gender, migration status, and occupational status. A final brief section draws some wider observations around reasons why people used digital technologies in specific ways. Where possible, χ^2 tests were used to test relationships statistically (undertaken at $p=0.05$ level).

Age and usage of digital technologies

With the above caveats in mind, it is interesting to note that there was no statistically significant difference between the numbers of respondents from different age groups saying that they did or did not use digital technologies. In part this is because most respondents did indeed use these technologies, and 75.8% of respondents were aged between 21 and 40.

Four other interesting observations can also be made

- Age does appear to have some statistically significant relationship with frequency of usage of different types of technology, especially with respect to desktop computers,²² and basic mobile phones,²³ although the overwhelming dominance in usage of smart phones and the Internet seems to be across all ages
- Age does not have a significant influence on the use of different types of technology for specific purposes, not even for example with activities such as playing games, which is often seen as a younger person’s preference,²⁴ or with watching videos for entertainment;²⁵
- Age did not have a significant relationship with either respondent’s likes or dislikes of digital tech; and

²¹ Asia Foundation and Partners Launch “Shuvayatra,” the Safe Migration Android App, <https://asiafoundation.org/2016/05/18/asia-foundation-partners-launch-shuvayatra-safe-migration-app/>. See also Lockshin, B. (2018) Supporting the ‘Safe Journey’: how mobile tech is making migration more secure and less costly, *Next Billion*, <https://nextbillion.net/supporting-the-safe-journey-how-mobile-tech-is-making-migration-more-secure-and-less-costly/>.

²² $\chi^2 = 19.60$ with 6 df which is more than the critical value of the Chi-squared distribution at the level of $p=0.05$ (12.59), and so we can reject the null hypothesis (of no difference between the distributions) at this level.

²³ $\chi^2 = 27.60$ with 9 df which is more than the critical value of the Chi-squared distribution at the level of $p=0.05$ (16.92), and so we can reject the null hypothesis (of no difference between the distributions) at this level.

²⁴ $\chi^2 = 12.46$ with 6 df which is less than the critical value of the Chi-squared distribution at the level of $p=0.05$ (12.59), and so we can accept the null hypothesis (of no difference between the distributions) at this level.

²⁵ $\chi^2 = 12.50$ with 6 df which is just less than the critical value of the Chi-squared distribution at the level of $p=0.05$ (12.59), and so we can accept the null hypothesis (of no difference between the distributions) at this level.

- Age likewise did not seem to play a role in determining how respondents used digital tech at different stages in the migration journey;²⁶

Gender and usage of digital technologies

Just under one-third of the total sample were women and just under 8% defined their employment status as “not in formal employment, but managing my household and children”; 12% of migrants were women who considered themselves to be the family member of a migrant. It is also important, though, to note that 14% of respondents were men who considered themselves to be family members of migrants; just under 4% of the sample were also men who described themselves as being “not in formal employment, but managing my household and children”. Overall, there was no significant difference (at $p=0.05$ level) between men and women respondents in whether or not they used digital tech, although about 7% of women did not use them compared with only 4% of men.²⁷



Figure 8: Migrant's wife proudly showing off the tablet sent to her by her husband (Source: Anita Ghimire)

There were some slight differences in the frequency of usage of different types of digital tech by male and female respondents. Somewhat surprisingly, though, none of these were significant (at the $p=0.05$ level), which may suggest that at least in our sample of people who used digital tech women were not particularly disadvantaged or marginalised. It may well be, also, that male migrants would buy devices for their households at home soon after they start earning money overseas so that they can keep in touch with their families. Likewise, there was no significant difference (at the $p=0.05$ level) between how men and women responded to the questions about their likes and dislikes of using digital tech, although women were slightly

²⁶ $\chi^2 = 4.62$ with 6 df which is considerably less than the critical value of the Chi-squared distribution at the level of $p=0.05$ (12.59), and so we can accept the null hypothesis (of no difference between the distributions) at this level.

²⁷ $\chi^2 = 0.92$ with 1 df which is less than the critical value of the Chi-squared distribution at the level of $p=0.05$ (3.84), and so we can accept the null hypothesis (of no difference between the distributions) at this level. Significantly also, every respondent stated that they identified as either male or female, and none marked the box for “other”.

more concerned about their use for abuse and harassment, and men disliked the cost of air-time slightly more than women. Interestingly men also showed a slightly higher propensity to emphasise that digital tech helped them network with others than did women. There were no significant gender differences (at the $p=0.05$ level) with respect to the question relating to usage at different stages in the migration journey.

There were again no significant differences with respect to gender in the use of apps (at the $p=0.05$ level), although patterns in usage did vary slightly, especially with the use of Instagram. While more men than women were confident that they had used apps specifically designed for migrants, this difference was not significant (at the $p=0.05$ level) and it should be remembered that most of the apps cited by respondents as being specifically designed for migrants were not in fact so.

The key conclusion to be drawn from this analysis is that among respondents to this survey there is little gender differentiation in any aspect of the use of digital technologies. Although women and girls may in general have less access to digital technologies than men in Nepal, it is important to emphasise that once they use such technologies men and women appear to do so in very similar ways. This might, at least in part, be because respondents of both genders felt that they had to use the same technologies and apps to keep in contact with each other while apart.

Occupational status and usage of digital technologies

Occupational status, likewise, seems to have rather little statistically significant impact on differential usage of digital tech. In part, this result is because the sample sizes for some response options in these questions was very low, itself influenced by the dominant usage of mobile phones (both basic and smart) by the majority of respondents. Overall, occupational status does not seem to have a significant impact on respondents' likes and dislikes of digital technologies, although those "not working, but looking for work" unsurprisingly emphasised the cost of digital devices as being a concern much more than did any other group. Interestingly, those working full-time in the informal sector had a higher propensity to value the use of digital tech for helping contact people than did any other group of respondents. Those managing their households and children, as well as those working part-time in the informal sector also valued their use for networking with other people more than any other group. These findings make intuitive sense, and it is good to see them evident in the analysis, even though they cannot be considered statistically significant at the $p=0.05$ level.

Migrant destinations and usage of digital technologies

The wide range of destination countries, and the relatively small numbers of migrants to each makes any statistical analysis of these data problematic. Nevertheless, focusing only on the top seven migration destinations (Australia, the United Arab Emirates, the USA, Qatar, New Zealand, USA Samoa, and the United Kingdom), there appears to be little differentiation between the ways through which migrants who travelled to these countries use digital tech.

Migrant status and use of digital technologies

The differences between the views and practices of migrants, their families and returned migrants were also considered, but as with the other analyses here it appears these factors made rather little difference in what digital technologies they used or for what purposes. There was, for example, no significant difference between whether or not each of these three groups used digital tech.²⁸ Although again not significant,²⁹ there was some differentiation between

²⁸ $\chi^2 = 3.17$ with 2 df which is less than the critical value of the Chi-squared distribution at the level of $p=0.05$ (5.99), and so we can accept the null hypothesis (of no difference between the distributions) at this level.

²⁹ $\chi^2 = 22.02$ with 14 df which is less than the critical value of the Chi-squared distribution at the level of $p=0.05$ (23.69), and so we can accept the null hypothesis (of no difference between the distributions) at this level.

these groups in terms of what they disliked about using digital tech, with a disproportionately smaller number of migrants living overseas disliking the costs of air-time, and a higher number having more concerns over being tracked when they use them. There was much less differentiation, though, with respect to what they liked about digital tech.³⁰

Reasons for using digital technologies

Over 94% of the respondents to this survey used digital technologies, with the vast majority using both smart phones and the Internet on a daily basis. Mobile phones were used mainly for audio calls, video calls, and social networking, followed by news updates and health-related activities. Most Nepali migrants and their families in Nepal and other countries who responded to this survey used digital tech much more frequently for a wider range of purposes than did the mainly Nepali migrants in Malaysia (Unwin *et al.*, 2021), few of whom used digital technologies for anything other than audio, video calls and news updates. Interestingly, many respondents to this survey in Nepal used other devices as well as mobile phones for a range of other purpose; more than 50% thus used laptops for learning and education, work purposes, and accessing government services.

As indicated in Figures 6 digital technologies were liked mainly because they are easy to use, it is quick to find information using them, they help in contacting people, and they are useful for finding things out. In contrast, Figure 7 indicates that the main reasons why respondents disliked them were because they are considered to cause health problems, devices are expensive to buy, and they can be used for tracking users. This section has also noted that there is some small variation in preferences by people from different backgrounds, but that these were not statistically significant.

Conclusions

This working paper has presented the results of an online survey of 266 respondents mainly invited to participate in the survey by colleagues in Nepal. Around three-fifths of the sample defined themselves as migrants, with just under a third being family members, and just over a tenth being returned migrants now living once again in Nepal. Three quarters of the sample were aged between 21 and 40, with women comprising one-third and men two-thirds of the respondents. Half of the sample had been migrants for more than five years. More than half of the respondents were working in the formal sector, just under 15% were not working but looking for work, and just over 8% were managing their household and children

There was surprising similarity in the results of the majority of respondents despite this diversity of sample characteristics. This suggests a commonality of interests underlying the ways in which migrants and their families uses digital technologies, but it is important to emphasise that this says very little about those in Nepal who do not use digital technologies for whatever reason. Only just under 5% of the sample claimed not to use digital technologies, and with such a small number it is difficult to reach any firm conclusions as to why this was the case. About 7% of women did not use them compared with only 4% of men, and both the elderly (half of those aged over 60) and the young (17% of those under 20) also had lower than average usage of digital tech.

Overall ten main additional conclusions are evident from this analysis:

- Almost all respondents did indeed use digital technologies (96.6% of migrants, 91.2% of returned migrants, and 91.5% of migrant family members)
- Smart phones were the dominant type of device use by respondents

³⁰ $\chi^2 = 13.21$ (with 12 df) which is less than the critical figure at $p=0.05$ of 21.03.

- These devices were used for multiple purposes, with more than 90% of respondents using them (in descending order of priority for their top three uses) for audio calls, video calls, social networking, news updates and health activities.
- Laptops were used by more than half of respondents for learning and education, work, and accessing government services.
- Digital technologies were used more frequently at each stage of migration, rising from 46.4% using them daily when deciding to migrate, and 85.4% doing so while in their new location
- Migrants generally used all of digital devices more frequently than did their family members remaining at home, but somewhat paradoxically the only purposes for which they used them on a more frequent daily basis than their family members were for audio calls and work; family members used them considerably more on a daily basis than migrants for social networking, playing games, and political activities.
- Most migrants made no use at all of apps specifically designed for them. Although 8.7% replied that they had indeed used such apps, closer inspection of the data indicates that none of the apps these people mentioned were actually originally designed specifically for migrants.
- Digital technologies were liked mainly because they are easy to use, it is quick to find information using them, they help in contacting people, and they are useful for finding things out.
- They are disliked because they are considered to cause health problems, devices are expensive to buy, and they can be used for tracking users.
- Personal characteristics such as age, gender, migration status, occupational status do appear to have some influence on aspects of the use of digital technologies, but very few of these are shown to be statistically significant using χ^2 tests with a level of $p=0.05$.

These findings are important for the second and third phases of our research on working with migrants and tech developers to develop some kind of digital intervention(s) that will help to reduce inequalities associated with migration. First, they strengthen the argument that simply *designing another new app will not be particularly valuable*. There are many migrant apps already in existence, and more currently under development with considerably more resources behind them than we could provide. Sadly, it seems probable that few migrants will ever use them. Second, it is very evident that the vast majority of Nepali respondents have *smart phones and access the internet very frequently*, and that they already use them for a wide range of purposes. This means that such technologies could readily be used to develop further pre-employment, post-arrival, and pre-return training for migrants and their family members. Third, it might well be wise to *work with, or build on, existing technologies and apps*, so as to improve them in ways that could increasingly empower migrants. Mobile devices were least used for work, for education and learning, and for accessing government services, all of which were purposes for which laptops were used most frequently. There might therefore be value in exploring ways through which migrants could access these functions through their mobile devices, which are generally cheaper to purchase than laptops.

These results only present a broad overview of ways through which Nepali migrants and their families use digital technologies. It is now important for further qualitative empirical research to be done to understand in more detail why they do so as well as how they think such technologies might be used to improve their migration experiences and reduce inequalities. This is the purpose of Phase Two of our research.

References

- Ghimire, A. (2019) Nepal Brief, MIDEQ, <https://www.mideq.org/en/resources-index-page/nepal-brief/>.
- Ghimire, A. and Maharjan, K. (2013) Student returnees and their reflection on contribution to Nepal: use of knowledge and skills, *Migration and Development*, 4(1), 90-107, DOI: [10.1080/21632324.2014.935148](https://doi.org/10.1080/21632324.2014.935148).
- Ghimire, A. and Upreti, B.R. (2012) Migration, mobility and development: enhancing our understanding in Nepal, Kathmandu: NCCR North-South and Nepal Centre for Contemporary Research, Discussion Paper, <http://www.nccr.org.np/uploads/publication/c0eb0fa600bbe642fc91ef1ebd8a69.pdf>.
- ILO (2018) [New digital service “SaverAsia” helps migrant workers save when sending money home](#), Geneva: ILO
- ILO (2019) [Digitalization to promote decent work for migrant workers in ASEAN](#), Geneva: ILO.
- ILO (2019) [Migrating in ASEAN with a mobile phone: gender gaps are not only in migrants’ salaries, but also in digital access](#), ILO Press release.
- Kunwar, K. (2020) Diversifying the roles of recruitment agencies for post-pandemic livelihoods in Nepal, MIDEQ, <https://www.mideq.org/en/blog/impact-covid-19-nepals-recruitment-sector/>.
- Unwin, T., Ghimire, A., Yeoh, S-G., New, S.S., Kishna, S.S., Gois, W., Lorini, M.R. and Harindranath, G. (2021) *Uses of digital technologies by Nepali migrants in Malaysia*, Egham: UNESCO Chair in ICT4D, Royal Holloway, University of London, Working Papers No.1.
- Yeoh, S-G and Ghimire, A. (2019) Nepal – Malaysia Migration Corridor, MIDEQ Research Brief, https://www.mideq.org/documents/22/MIDEQ_Nepal-Malaysia_corridor_brief_v2.pdf.

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